[1]CAAM 480: Pedagogy for CAAM 210 Rice Learning Assistant

Fall 2014 F 2:00-3:50 Duncan 1046

Instructor:

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CAAM 480 is designed to support Rice Learning Assistants (RLAs) as they instruct their own lab sections of CAAM 210. RLAs will be teachers in the lab sections, responsible for guiding students in achieving the goals of CAAM 210. The overarching goal of CAAM 210 is for students to gain MATLAB fluency on four planes:

1) to speak the language free of syntactic error;

2) to confidently translate English simulation and/or design questions;

3) to identify the proper numerical method for the job; and

4) to represent the solution in the most visually striking way possible.

These goals require significant opportunity for CAAM 210 students to engage with the content. The lab sections have been designed to allow RLAs to work with relatively small groups of CAAM 210 students to enhance their opportunities to achieve this fluency.

CAAM 480 will allow RLAs to:

1) review the content of CAAM 210 in the context of how students in their lab sections approach the weekly projects;

2) learn the theory behind and practice basic teaching skills to help make content accessible to the students in their lab sections; and

3) reflect on their teaching practice in order to better meet the diverse needs of students in their lab sections.

Course Outline

CAAM 210 is scheduled to meet M, W, F at 1:00-1:50pm. Thursdays/Fridays are reserved for lab sections of 10-15 students led by RLAs. RLAs will meet from 2-3:50 on Friday afternoons in CAAM 480 to reflect on their students' learning experiences to date and to prepare for the next meetings with their lab groups.

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[1] This syllabus is generously borrowed from previous syllabi, subject to change.

RLAs will have weekly preparation for the class consisting of a reflection on the previous week's lab section (a written description of the lab meeting, an analysis of what was helpful for the students and what may have hindered their learning, generalizations from the analyses, a plan to incorporate the generalizations into the next lab meeting, and questions that still need to be answered) and short readings in teaching and learning or associated activities, including observations. A typical class session will include:

a) RLAs sharing reflections on their teaching in small groups and with the class, highlighting their plans for the following lab;

b) an analysis of the CAAM 210 content for the next lab, highlighting what parts typically pose problems for students, what misconceptions are common among students, and ways to teach content to address the questions and misconceptions; and

c) the introduction, discussion, and practice of pedagogy skills to support the RLAs' teaching.

Course Materials

Readings will be provided on OwlSpace. In addition, we highly recommend The Joy of Teaching and strongly recommend What the Best College Teachers Do and On Course.

Requirements

1) Attendance and participation in at least 13 of 14 class meetings. You must be present and prepared to participate for the whole class period to fulfill this requirement. If you cannot be present for the whole class period, it is your responsibility to provide participation (despite your absence) in a meaningful way (for example, coming to office hours)

2) A reflection every other week on your teaching following the format provided in class. Each class period will begin with an opportunity to reflect orally with fellow RLAs; your written reflection each week will be due by 5 PM on the following Monday.

3) Written responses to the assignments: a response to a reading, documentation of an activity, or a reflection on an observation, as assigned. The written responses will be critical to the lessons with which they are associated; full credit will only be awarded for written responses completed by the due date. These responses may be appended to RLA reflections unless you are requested to bring the response to class, in which case you will use the response in discussion and then turn it in.

4) A case study inspired by the learning of one or a small sample of students in your lab section. The case study will include a description of the learning issue involved with the subject/s, support with data from observations, a study of research on the learning issue using a minimum of three appropriate sources, and a conclusion about how to make content accessible to the subject/s. The case study will be developed

throughout the semester and will be formally presented to current RLAs and any guests on the last day of class.

Grades

Grades, including plus and minus grades, will be assigned according to the following guidelines:

Biweekly written reflections on classroom practice using the format provided: 40%. Reflections are expected to be thoughtful responses to each of the lessons you teach. They will be graded with an S/S-/U system. Satisfactory reflections that are late will receive an S-. Reflections scored with a U may be rewritten to earn at most an S, if the original was turned in on time, or an S-, if the original was late.

Class participation, including written responses to assignments: 40%. Most written assignments will be integral to the lessons for which they are produced and will only receive full credit if they are completed on time.

Case study: 20%. The case study will be developed in several steps (identified in the Schedule) over the course of the semester, including at least one conference with a course instructor. Guidelines for producing and evaluating the case study will be distributed in class.

Notes

Statement on Disabilities: Any student with a disability requiring accommodations in this class is encouraged to contact one of the instructors after class or during office hours. Additionally, students should contact the Disabled Student Services office in Allen Center, Room 111, 713-348-5841.

Statement on the Honor Code: Students are expected to abide by the Rice University Honor Code as described in the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. For weekly written assignments and the case study you are welcome to discuss your ideas with others before writing, but you should cite all your sources and the work you turn in must be original. All direct and indirect quotations from other sources should be properly acknowledged. Please include complete citations using the style of your choice (APA, MLA, Chicago/Turabian) for quotations and references made in the body of a text.

Schedule, Subject To Change

Week 1

How things work. First-impressions. Schedule for CAAM 210.
Pedagogy: Cooperative Learning (Resource: "Cooperative Learning," pp. 35-47, in Dean, et al. (2012).)

Assignment (Read for Week 3):
Reading: "Building Trust with Students," pp. 163-176, in Stephen D. Brookfield (1990). *The Skillful Teacher.* San Francisco: Jossey Bass Higher Education Series.

Week 2

Content: Overview of CAAM 210. Labs 0.3, 0.4 and PreLabs.
How to Grade.
Critique other quiz questions.
Pedagogy: Cooperative Learning redux; building trust; FERPA and sexual harassment.
Assignments:
1) Reading from Week 1
2) Reading: "The Nature of Good Questions," pp. 59-66, in John Barell (2003). *Developing More Curious Minds*. Alexandria, VA: ASCD.
3) Reading: "Caution: Praise Can be Dangerous," Carol S. Dweck (1999), pp. 94-98, in K. M. Cauley, F. Linder and J. H. McMillan, editors (2006). *Annual Editions: Educational Psychology 05/06*. Dubuque, IA: McGraw-Hill/Dushkin.
4) Reflection due WEEK 3.

Week 3

Content: Guidelines for 210 Lab 1.
Pedagogy: Writing Questions (again) and Teaching skill: reinforcement.
Assignments:
1) Write out three potential hypotheses to test for your case study.
If you are preparing a Lab assignment, please come up with eight survey questions for your lab which will be given to all students after the lab is due.

Week 4

Content: Guidelines for 210 Lab 2.
Pedagogy: Open discussion: Case study/RLA sessions/whatever.
Assignment:
1) Reading: "Opening and Closing Class readings" on OwlSpace; "Opening and Closing Class sample methods" is an optional reading.
2) Reflection due WEEK 5.

Week 5

Content: Guidelines for 210 Lab 3.
Pedagogy: Teaching skill: openings and closings.
Assignments:
1) Observe a class (any class) this week, preferably a STEM class, fill out the form on the RLA's use of reinforcement, questioning, and openings and closings. You may, if you choose to observe me using a video online.
2) Turn in the name and an annotation for at least one of the sources you will use to support your case study. Provide the bibliographic reference so we can access it, and in the annotation first summarize the content and then describe how it is useful to your study. Read the source and prepare a 2 minute overview of the topic and why are going to use it.

Week 6

Content: Guidelines for 210 Lab 4.
Pedagogy: Observing in a classroom; Midterm evaluation of the class.
Assignments.

1) Watch:
a) Jeese Schell "When Games Invade Real-Life"
http://www.ted.com/talks/jesse_schell_when_games_invade_real_life.html
b) John Hunter "The World Peace Game"
http://www.ted.com/talks/john_hunter_on_the_world_peace_game.html
2) Reflection due WEEK 7.

Week 7

Content: Guidelines for 210 Lab 5
Pedagogy: Gameification/Motivation

Week 8

Content: Guidelines for 210 Lab 6. **(at TeaHouse)**
Pedagogy: Open discussion at Teahouse.
Assignments: Reflection due WEEK 9.

Week 9

Content: Guidelines for 210 Lab 7.

Assignments

1) Reading: choice of:
   a) "Learning and Memory," pp. 11-22 (recommend also looking at the analogy on pp. 26-28 and the example on pp. 34-37), in Edward J. Mastascusa, William J. Snyder, Brian S. Hoyt, and Maryellen Weimer, consulting editor (2011). *Effective Instruction for STEM Disciplines*. San Franscisco: Jossey-Bass Higher and Adult Education Series; or
   b) "Problem-Based Learning," pp. 123-131, in Edward J. Mastascusa, William J. Snyder, Brian S. Hoyt, and Maryellen Weimer, consulting editor (2011). *Effective Instruction for STEM Disciplines*. San Franscisco: Jossey-Bass Higher and Adult Education Series.
2) Turn in the name and an annotation for at least one additional of the sources you will use to support your case study. Provide the bibliographic reference so we can access it, and in the annotation first summarize the content and then describe how it is useful to your study. Read the source and prepare a 2 minute overview of the topic and why are going to use it.

Week 10.

Content: Guidelines for 210 Lab 8.

Pedagogy: Learning theory, including problem-based learning.

Assignment:

1) On a sheet of paper that you bring to class and turn in, describe the one or two lessons that have been most successful for eliciting significant participation from a broad range of students in your lab section. To what do you attribute the success?
2) Reflection due WEEK 11.

Week 11

Content: Guidelines for 210 Lab 9.
Pedagogy: Teaching skills: supporting collaborative learning.
Assignments:

1) Reading:
   a) "Why Do Student Development and Course Climate Matter for Student Learning?" (only the student development part), pp. 153-170, in Susan A. Ambrose, Michael W. Bridges, Michele DiPietro, Marsha C. Lovett, Marie K. Norman (2010).
   b) *How Learning Works: Seven Research-Based Principles for Smart Teaching*. San Francisco: Jossey-Bass Higher and Adult Education Series.
2) Write an outline of the content of your case study. Include the issue, the observations and research you have done to support teachers dealing effectively with the issue, a conclusion about how the understandings enhance teaching practice that makes content accessible to students, and questions that still need to be answered.

Week 12

Content: Guidelines for 210 Lab 10.
Pedagogy: Student development in college.
Assignments:

1) Activity: Go observe a class and complete the observation form that we created in class last week (and that will be distributed through Owlspace) .
2) Prepare an elevator pitch (30-second summary/preview) of your case-study.
3) Read (this can be done in class): "Applying the Research on Instruction: An Idea Whose Time has Come," pp. 1-10, in Robert J. Marzano, Debra J. Pickering, and Jane E. Pollock (2001). *Classroom Instruction that Works: Research-Based Strategies for Increasing Student Achievement*, Alexandria, VA: ASCD.
4) Reflection due WEEK 11.

Week 13

Content: Guidelines for 210 Lab 12.
Pedagogy: Pedagogy in CAAM 211.
Assignments:

1) Prepare your case study for display and dissemination.

Week 14

(Thanksgiving Week, no class)

Week 15

(Lab 13 is the Final (pledged lab)- no need to go over)
Pedagogy: Sharing of the case studies done this semester.